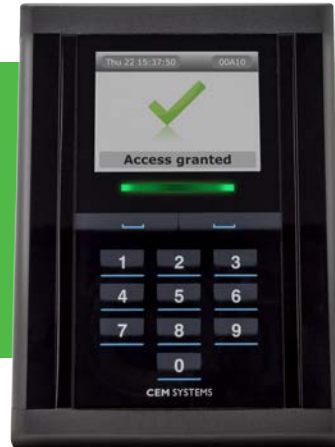# CEM SYSTEMS
From Tyco Security Products

S700s
Combined Multi-Technology Intelligent Serial Reader and Controller

Features that make a difference:

- Intelligent card reader designed for use as part of the CEM Systems AC2000 access control software range

- Contactless card presentation with the option to enable Personnel Identification Number (PIN) for two stage authentication

- Integral reading support for 13.56 MHz smart card and 125 kHz proximity technology

- Communicates with the host server via ECM, removing the need for an intelligent control panel in the system design

- Large reader database for offline card verification and alarms

- Large graphical LCD which is used to display a number of predefined messages

- Four analogue inputs to monitor door or alarm conditions

- Two changeover relay outputs to activate door strike or other equipment

- Remote programming facility to download updated firmware

- Weather-proof casing: IP65-rated

- Easy to install

The S700s Card Reader is the next generation fully integrated combined serial card reader and controller, designed for use with AC2000 as part of an integrated on-line access control system. The S700s can be deployed to control access to restricted areas or in special applications where card activation of equipment is required.

Using a powerful 32-bit processor, the S700s serial reader gives full off-line card verification and decision making at the point of entry, even when host communication is not available.

Exit reader options include a twinned S700 Exit reader, push button or a third party Wiegand exit read head for IN/OUT control.

The IP65-rated polycarbonate enclosure houses the reader electronics and comes with a large 4x3 capacitive light touch keypad, graphical display screen, context sensitive function keys, and high intensity multi-colour LED light bar.

The S700s serial reader has four analogue inputs (voltage supplied), which can be used to monitor door and alarm conditions for transmission to the host server. All four inputs are four state (tamper detect) capable. Two outputs are also fitted to control the activation of door locks or other equipment.

Host Communications
The S700s has an RS-485 serial port allowing it to communicate with the host AC2000 controller, removing the need for an additional intelligent control panel in the system design.

On-board Card Reading Technology
Designed to support 13.56 MHz smart card technology (MIFARE® (CSN), DESFire® (CSN), CEM DESFire 3DES, CEM DESFire AES, iCLASS, iCLASS SE, PicoPass) and 125 kHz HID® proximity technology. A single Wiegand interface is also provided to connect third party readers.

Offline Operation
A full offline database is downloaded to the reader from the host server with subsequent changes to cardholder data automatically sent as updates. This ensures the reader has up-to-date card information when operating in offline mode. Alarms and transactions are recorded in offline mode are passed automatically to the AC2000 system when reader communications are re-established. This ensures zero downtime at system critical locations.

Reader Messages
The S700s has an easy to read large 2.4 inch graphical LCD which is used to display a number of predefined messages to cardholders depending on their privileges e.g. Wrong Zone, Lost/Stolen Card, Card About to Expire, Access Granted and many more.

Easy to Install
The S700s is designed to be extremely easy to install. The installer simply configures the reader address on the AC2000 software and applies the same reader address to the S700s. The S700s is then provided with power and the reader self-configures by means of downloading data from the host.

Proximity to Smart Card Migration

The S700s serial multi-tech version supports the simultaneous reading of traditional Proximity cards with either MIFARE, MIFARE DESFire or iCLASS SE smart cards. This provides existing sites using proximity cards a seamless path to migrate to a more secure smart card solution with zero system downtime and with no effect on security. Once migrated, smart cards can then be used for other applications such as cashless vending, biometric storage, logical access and much more. The S700s is the perfect migration tool, allowing a seamless, cost-effective transition to smart cards over time.

Graphical Feedback

The S700s has been designed to be as user friendly as possible and guide the user though intuitive graphical messages displayed via the reader LCD. The S700s screen provides graphical feedback and predefined messages and icons to cardholders depending on access privileges. Cardholders can quickly and efficiently identify why they may have not gained access, or if their card is expiring.

High Security Environments

The S700s can be used in conjunction with a CEM Systems Door Interface Unit (DIU) to provide the highest level of security at a door, moving power supply for the lock and input monitoring away from the reader to a secure location.

Remote Programming

The S700s can be remotely programmed from the host computer, providing increased system flexibility and efficiency. The remote programming feature provides new functionality or reader enhancements for a future-proofed solution.

Encryption and Security Features

At the card reading level, the S700s can be configured to use highly secure encryption key authentication, such as 3DES or AES128. This encryption takes place between the smart card and S700s reader, providing secure transmission of data and enabling only cards with the correct keysets to be read. This also eliminates the possibility to copy or replay card details. When the S700s is used in conjunction with a companion S700 Exit reader, the communications between the readers are secured via AES encryption. This ensures data transmission between the two readers cannot be deciphered.

Examples of Graphical Messages

Specifications

Physical
Size. . . . . 144 x 100 x 49 mm (At widest point)
Weight. . . . . 300 g
Housing. . . . . Flame retardant polycarbonate,
with UV stabilization. RoHS compliant.
Colour . . . . Black

Power Requirements
Voltage . . . . 9-28 VDC
Current Consumption
(Watts). . . . . 2.4 W Typical – 4.8 W Peak

Environmental
IP Rating IP65
Temperature . . . . -20° to +60° C (-4° to 140° F)
LED Indicator. . . . . Light Bar: High intensity multi-coloured
LCD Indicators . . . . 2.4 inch diagonal, 240 x RGB x 320 TFT full
view, Brightness: 400 cd/m² dimmable,
Contrast ratio 400:1
Keypad . . . . 12 key (10 numeric keys, 2 context sensitive
function keys), capacitive, light touch

Functionality
Inputs . . . . Four analog inputs — voltage supplied,
4 state (tamper detect)
Outputs. . . . . Two relays fitted — Changeover volt
free contacts
Rating . . . . 24 VDC @ 2 Amps max
Memory. . . . . 32 MB SDRAM
2 Gb data flash

Database Size in Off-line Mode
Cardholders 250,000
Alarms & Transactions. 50,000

Communication Interface
To Exit Reader. . . . . RS-485 - Belden 8723 (22 AWG shielded
twisted 2-pair) or equivalent
Interfaces . . . . Single Wiegand interface with a maximum cable
length of 50 Meters - Belden 9514
Terminal Connection . . . . Screw terminal: Relay & Power, Wiegand, Serial
To System Host. . . . . RS485 - Belden 8723 (22 AWG shielded
twisted 2-pair) or equivalent

Regulatory
Agency Certifications. . . . . . . FCC Part 15, CE

Requirements
- AC2000 v7.1 and higher
- AC2000 Airport v7.1 and higher
- AC2000 Lite v7.1 and higher
- Ethernet Communications Module (ECM)
- RTC Ethernet reader controller

Ordering Information

Product Code	Description
RDR/701/003	S700s Card Reader with PIN (125 kHz HID Prox and 13.56 MHz iCLASS SE)
RDR/701/004	S700s Card Reader with PIN (125 kHz HID Prox and 13.56 MHz MIFARE/DESFire)
RDR/701/006	S700s PicoPass Reader with PIN
RDR/701/007	S700s Card Reader with PIN (13.56 MHz MIFARE/DESFire)
RDR/701/008	S700s Card Reader with PIN (13.56 MHz iCLASS SE)

To order contact cem.sales@tycoint.com or call +44(0) 2890 456 767

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